

## 13. Radiation Protection Program\_

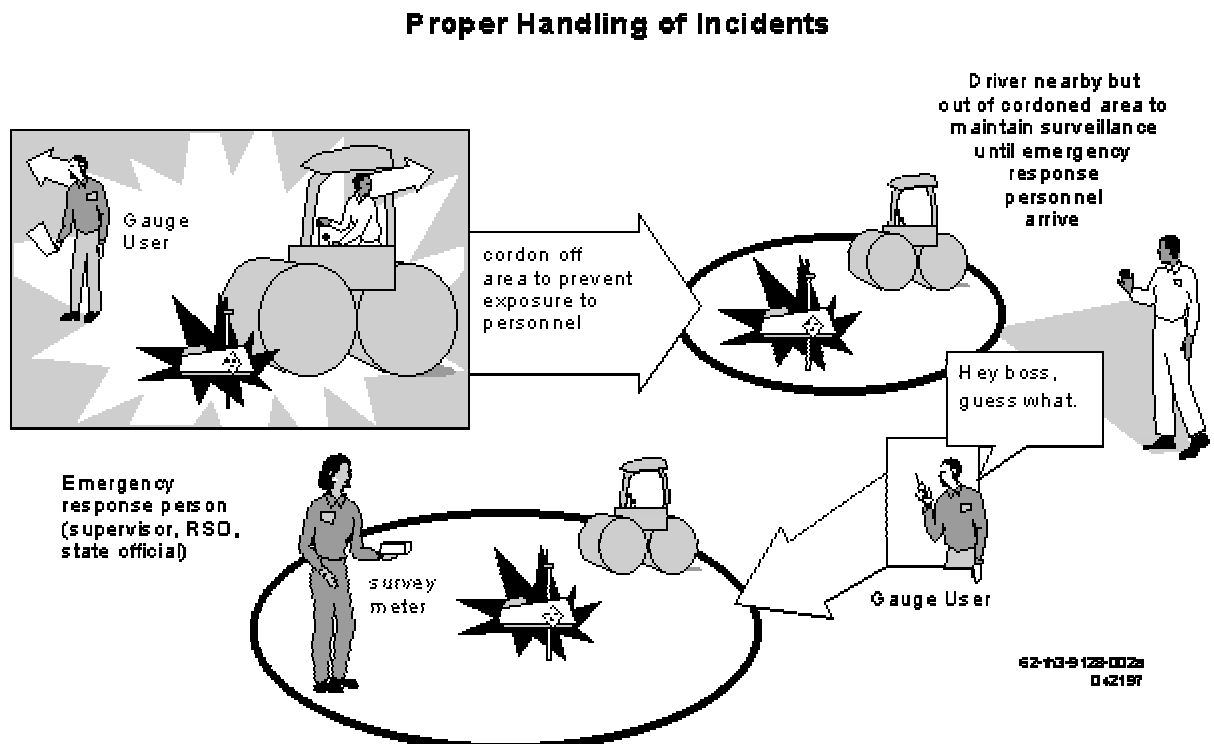
### 13A. Operating and Emergency Procedures

Regulations: 180 NAC 1-011, 180 NAC 3-016.02, 180 NAC 4-004, 180 NAC 4-031, 180 NAC 4-032, 180 NAC 4-057-059, 180 NAC 3-026 and 180 NAC 10.

**Criteria:** *Each applicant must do the following:*

- *Develop, implement, and maintain operating and emergency procedures which ensure compliance with 180 NAC 10 “Notices and Instructions and Reports to Worker, Inspections” and 180 NAC 4 “Standards for Protection Against Radiation.”: containing the following elements:*
  - *Instructions for using the portable gauge and performing routine maintenance, according to the manufacturer's recommendations and instructions*
  - *Instructions for maintaining security during storage and transportation*
  - *Instructions to keep the gauge under control and immediate surveillance during use*
  - *Steps to take to keep radiation exposures ALARA*
  - *Steps to maintain accountability during use*
  - *Steps to control access to a damaged gauge and*
  - *Steps to take, and whom to contact, when a gauge has been damaged. Include the HHS R & L emergency response phone numbers which includes the Nebraska State Patrol's 24 hour emergency number.*
  - *Safety measures to be used in transporting the device in the applicant's vehicle (for example, fully secured within the transportation vehicle and away from the passenger compartment).*
  - *Specific instructions for performing leak tests.*
  - *Emergency procedures to be followed in case of accidents involving damage or loss of the gauges or devices, including names and telephone numbers of the individual(s) within the applicant's organization who should be notified and who would, in turn, notify the local police and appropriate state personnel.*
  - *Specific instructions to users informing them that any maintenance on the gauges involving dismantling, removal of source holder(s) etc., must not be performed by the user and must only be performed by the manufacturer of the device, unless the applicant has specifically requested authority for performing maintenance.*
- *If gauges are used for measurements with the unshielded source extended more than 3 feet beneath the surface, licensees must do the following:*
  - *Require use of surface casing or alternative procedures to ensure the source can move freely in the holes provide instructions for procedures to follow to retrieve a stuck source, require reporting to the Agency pursuant to 180 NAC 3-026.02 Item 2 when a stuck source cannot be retrieved .*
  - *Provide copies of operating and emergency procedures to all gauge users and at each job site.*
  - *Require use of surface casing or alternative procedures to ensure the source can move freely in the holes provide instructions for procedures to follow to retrieve a*

- stuck sources require reporting to the Agency, pursuant to 180 NAC 3-026.02 Item 2 when a stuck source cannot be retrieved .*
- *Provide copies of operating and emergency procedures to all gauge users and at each job site.*



**Figure 2 Proper Handling. Gauges are often damaged by heavy equipment at job sites and emergency procedures need to minimize radiation safety risk.**

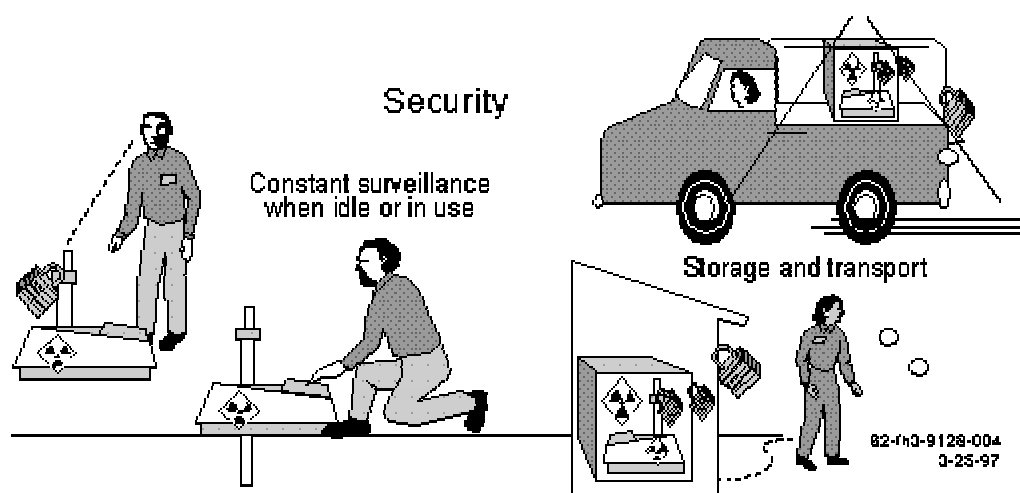
Lost or stolen gauges and, as illustrated in Figure 2, gauges damaged by heavy equipment during use at job sites, are the most common occurrences that present a potentially significant radiation safety risk. Figure 3 illustrates steps that should be taken to prevent loss, theft, or unauthorized use. Operating and emergency procedures should be developed to minimize these risks. When gauges are not in use, licensees are encouraged to:

Keep gauges locked in covered vehicle compartments; and  
Avoid parking vehicles in areas vulnerable to theft.

Operating and emergency procedures should be developed to minimize these risks. The Agency considers security of gauges extremely important, and lack of security is a significant violation for which gauge licensees are fined. See Appendix F for sample procedures.

Certain portable gauges are used to make measurements with the unshielded source extended more than 3 feet beneath the surface. Unless precautionary measures are taken, it is possible for the source to be buried under dirt or concrete that collapses around the source during the measurements. Precautionary measures need to be planned in advance to prevent these sources from being buried and to recover sources should they become stuck. To ensure that the hole is free of debris, it is not likely that debris will re-enter the cased hole, and the source will be able to move freely, it is acceptable for licensees to use surface casing from the lowest depth to 12 inches above the surface. If it is not feasible to extend the casing 12 inches above the surface, licensees may cap the hole and use dummy probes before making measurements with an unshielded source to ensure that the hole is free of obstructions.

Notify the Agency when gauges are lost, stolen, or certain other conditions are met. Refer to the 180 NAC 4-057 to 059 for a description of when and where notifications are required.



**Figure 3 Security. To avoid lost or stolen gauges, licensees must keep the gauges under constant surveillance, or secured against unauthorized use or removal.**

**Response from Applicant:** Do the following:

- “We have implemented and will maintain operating and emergency procedures in Appendix F Regulatory Guide 3.4 “Radioactive Material Guidance for Portable Gauges and X-ray Fluorescence Analyzers.” “Copies of these procedures will be provided to all authorized users and at each job site.”

(A copy of these Operating and Emergency Procedures will be copied from Regulatory Guide 3.4. The information to individualize the procedure will be completed.)

**Or**

- “We have implemented and will maintain operating and emergency procedures submitted with this application. They meet the criteria of section titled Radiation Protection Program – Operating and Emergency Procedures in Regulatory Guide 3.4 “Radioactive Material Guidance for Portable Gauges and X-ray Fluorescence Analyzers.”. Copies of these procedures will be provided to all authorized users and at each job site.”